Project Partners

U.S. Census Bureau
Coastal Services Center
National Estuarine Research Reserve
National Marine Sanctuary Program
National Marine Fisheries Service
International Program Office

About Special Projects

The mission of Special Projects is to enhance the performance and capacity of NOAA's National Ocean Service and its partners through strategic problem solving, integration, and innovation, as well as to ensure more effective and efficient delivery of products and services to the coastal stewardship community. Special Projects conducts analyses and assessments for coastal areas and works to identify issues and solutions, assemble and synthesize data, evaluate and prioritize options, and develop products that support quality coastal resource management. Support services are provided by offering assistance in six business lines or areas of expertise.

Business Lines

Planning, Facilitation, and Process Design
Database and Web Application Development
Socioeconomic Analysis
Coastal Resource Analysis and Assessments
Mapping and Geographic Information Systems
Performance Measurement

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Spatial Trends in Coastal Socioeconomics
STICS Web Site

STICS web site offers, in one easy-to-use application, time series georeferenced demographic data from the U.S. Census Bureau for the last four decadal censuses (1970, 1980, 1990, and 2000) and the Bureau of Economic Analysis (BEA) data (1969 to 2000). Analysis of income and employment data from this information can provide useful insights into the socioeconomic trends in the nation's rapidly developing coastal regions, and can help coastal managers make more informed decisions regarding program priorities and delivery of services.

http://stics.noaa.gov

Objectives

The primary objective of this web site is to increase awareness and improve access for the coastal stewardship community to socioeconomic information in a timely fashion. The web site includes information for all 50 states and provides a set of web-based data analysis and display tools to facilitate data retrieval, mapping, analysis, assessments, comparative studies, and also offers query tools to retrieve data by individual or multiple counties or watersheds as defined in NOAA's Coastal Assessment Framework (CAF).

The user interface on the web site does not require knowledge of database management and/or statistical analysis packages. Decadal Census data are combined using their common denominator variables in a format that enables comparisons across time (1970-2000) and space (political and watershed boundaries). Typical content includes demographic information such as population, age, racial and ethnic composition, income distribution, and residential mobility. Personal income and employment data from the BEA are provided at the political and watershed levels in time series (1969-2000).

By providing "one-stop-shopping" access to this socioeconomic data, resource managers will more easily get a comprehensive picture of the geographic patterns of human activity and their relationship to the environment. The capabilities developed in this web site will be evaluated for benefits of the integrated data delivery system and for determining the feasibility of transferring the capability to other project applications.

Data Access and Analysis Tools

Value Added

While it is true that socioeconomic information can be obtained from the Census Bureau via the Internet or from CD-ROMs sold by third party vendors, compiling it is a very time-consuming process, requiring the user to extract data variables by individual area. Moreover, data are most readily available at the county level and historical data needed for trend assessment are usually not available. The data are not in a format to allow for analysis by coastal areas or by watersheds, and visualization/analysis tools are not available in most cases. This web site provides spatial patterns of socioeconomic data to more users with different levels of data and analysis needs.

Value added to Census and BEA data are first, historical data have been normalized to 2000 county boundaries to allow users to compare common denominator variables for various years with the exact boundary definitions; second, the information has been placed into NOAA's Coastal Assessment Framework (CAF). The CAF has two organizational structures, coastal counties in coastal zone management, and watersheds based on U.S.G.S. hydrological units. Watersheds include Estuarine Drainage Areas (EDA), Coastal Drainage Areas (CDA), and Fluvial Drainage Areas (FDA). The third value added component is a set of three visualization tools. These include profiles (which include custom graphics and statistical significance tests), GIS Census 2000 mapping, and a data query and download utility.

Features

The U.S. Census data offered on STICS were developed from the "long form." These include detailed population, and housing characteristics such as income, poverty status, education level, employment, housing costs, immigration, and other variables. The BEA county level data are area-prorated to obtain watershed estimates. STICS provides powerful capabilities for organizing socioeconomic information, including:

Summary Profile Reports Two types of profile reports are offered. One includes U.S. Census data and the other one includes U.S. BEA data. Based on the geographic area of interest, a standard profile report is produced.

Custom Graphic Based on a user selection of a set of geographic, temporal, and variable (Census or BEA) parameters, the user is able to produce a graphic with a series of customized options to modify the graph. This tool allows the user to choose the type of graphic to be displayed (i.e. bar chart, pie chart, or scattered).

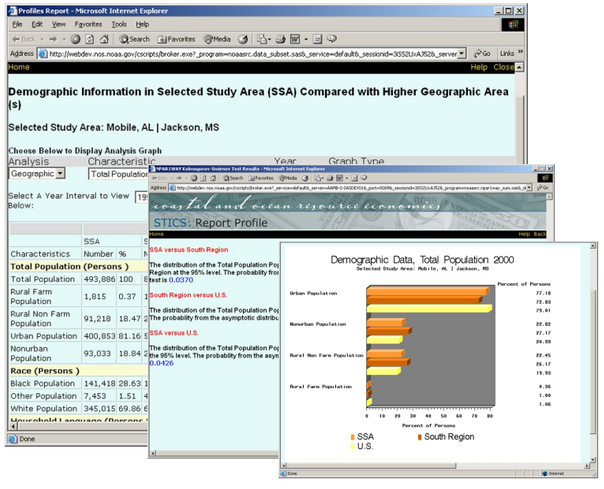
Significance Test A non parametric statistical test can also be run (Kolgomorov-Smirnov) to determine the statistical significance of the difference in distribution, while comparing socioeconomic data from two study areas.

Data Query and Download The user may browse, sort, or choose the extent of the data and create a dataset for download.

Mapping Census 2000 Tool This tool allows users to view several Census geographical areas and provides Census 2000 data with more variables than what is offered in the trends database at the block level in coastal zone boundaries. It provides aggregated data for places, voting districts, and zip code tabulated areas and it has query and download capabilities.

Documentation/Metadata Comprehensive documentation, data dictionaries, and FGDC metadata is offered.

Assessment Reports Several assessment reports with focus on coastal areas are offered using both the information provided on the web site and other data/ancillary materials.



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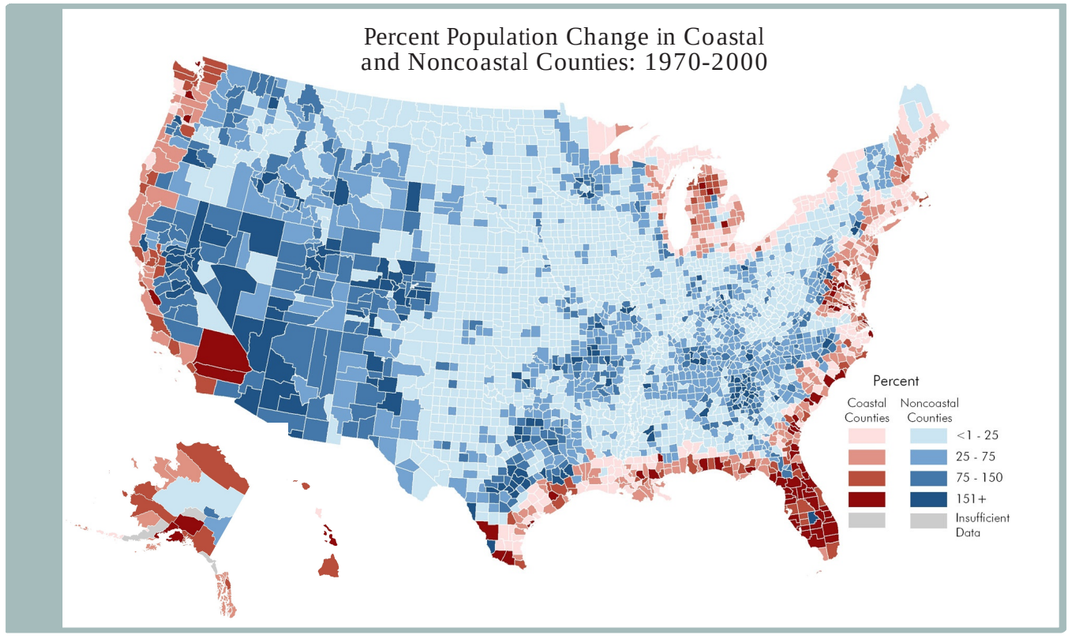

Geographical Selections

The Census data for all four decades are normalized to 2000 county and watershed boundaries. The basic procedure was to overlay the 2000 county boundaries with those of an earlier year. This allowed us to identify how county boundaries had changed between censuses. We then used area proration coefficients to determine the proportion of persons in each earlier county that went into making up the new 2000 county. This method determined the relative weight to allocate to each portion. These population weights were then applied to the 1970, 1980, and 1990 county level variables to convert them to 2000 county boundaries. The time series database started from block group level data. Therefore, aggregated data are also offered by counties, states, divisions, regions, and by different size watersheds (i.e. U.S.G.S. Hydrologic Cataloging Units). Socioeconomic data aggregated to EDA, CDA, and FDA watersheds are also provided. For smaller estuaries, researchers can build their own EDAs and then submit them to the development team (the researchers might be from NOAA) for addition to menu lists. For the Census 2000 only, the web site offers block data in coastal zone boundaries, and aggregated blocks in places, voting districts, and zip code tabulated areas.

Uses

The visualization tools allow users to access data for all four decades normalized to 2000 county and watershed boundaries. This allows users to compare common denominator variables for various years within the exact same boundary definitions. In this way "apples-to-apples" comparisons of data in 2000 county and watershed definitions, and time series analysis (looking at the changes of a given location across time periods) can be performed. Because of the normalized data feature, one can measure just the change in population without having to try to control for changes in boundary definitions. The drawbacks on the time series database in the case of Census data are that the dataset is not as exhaustive as the full censuses and that the data will not be expressed at the block level. The time series database is a subset of the variables for each of the given decades. An advantage of the time series database is that the visualization tools developed to graph, map, and query the data will perform better because it accesses aggregated data (i.e. state, county, watershed). Summary reports are much easier to obtain on the web environment using this database.